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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/631,366

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Philip Kwan

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EXAMINER

POLTORAK, PIOTR

ART UNIT

PAPER NUMBER

2134

MAIL DATE

DELIVERY MODE

07/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/631,366	Applicant(s) KWAN, PHILIP	
	Examiner PETER POLTORAK	Art Unit 2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-13,17,18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9, 11-13, 17-18, 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/16/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment and remarks therein, received on 4/08/08 have been entered and carefully considered.
2. The drawings received on 3/10/08 have been accepted and, the objection to drawings is withdrawn.
3. The amendment to the specification received on 3/10/08 has been accepted.
4. The IDS received on 6/16/08 has been accepted and considered.
5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
6. In light of applicant's amendment and arguments the 35 USC § 112 rejection is withdrawn.

Response to Amendment

7. *The main argument raised by the applicant is that the art of record (e.g. Doyle) does not suggests that "this validation process is delayed based on the specific criterion of a predetermined amount of traffic being passed through the port" and as a result it fails to teach the newly added limitation "wherein said learning is delayed from a time of receipt of the first data packet until a predetermined amount of traffic has passed through the port".*

The examiner acknowledges the missing limitation in Doyle's invention but points out that configuring network devices to delay a particular action, in particular network communication, which inherently resolves in a predetermined amount of traffic to be passed through the port (in the network communicating device) is old and well

known in the art of computers. Due to potentials errors or simply inability of a network device to send a request or receive a respond to a request, network devices are frequently set by default or by an administrator to delay in case a particular event cannot occur.

Additionally, note that different processes have different priorities (also setup by default or administrators) that which result in delays of processes with lower priorities when higher priority processes execute.

Lastly, in order to avoid a single point of failure, today's networks frequently use a plurality of devices offering the same functionalities (e.g. DHCP, DNS and firewall servers, etc.) and utilizing of such devices storing routing/network configuration data (such as DHCP, DNS and firewall table entries) requires synchronization which inherently involves time delay.

8. *As per newly introduced claim 23, applicant argues that the art of record (Doyle, Rayes, Whelan, and/or Sawada) does not disclose that "the network device includes a timer configured to clear the table of one or more source IP addresses at predetermined time intervals". Also, in the Remarks/Arguments (pg. 15) applicant clearly defines the interpretation of the content addressable memory and argues that according to this interpretation, the previous Office Action fails to teach "wherein the table is stored in an access control list of a content addressable memory device".*

This Office Action addresses these arguments below.

9. Claims 1, 3-9, 11-13, 17-18 and 20-25 have been examined.

Claim Objections

10. In claim 23, a letter “s” in the phrase: “... the network device includes a s timer...” should be deleted or changed to “system”.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

11. Claims 1, 4-9, 11-13, 17-18, 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle (U.S. Patent No. 7134012) in view of Woundy (USPN 6009103).

As per claims 4, 17, 24 and 25, Doyle discloses a network device comprising a port (e.g. Fig. 1), receiving a first data packet on the port, the first data packet including a first MAC address and a first source IP address (see Fig. 6); determining if the first MAC address is a new MAC address that is not included in a table of the network device, the table configured to store a plurality of source IP address and MAC address pairs; learning, wherein the first MAC address and the first source IP address form a first source IP address and MAC address pair (Fig. 6, step 610 and associated text, for example).

12. As per newly introduced limitations, Doyle discloses the use of a single DHCP server, thus the use of only a single table of the network device. When the IP/MAC address is not found in the table the data packet is discarded (step 620, for example). As a result, Doyle does not disclose learning the first source IP address if the first MAC address is a new MAC address.

Woundy discloses a plurality of DHCP, which inherently comprise a plurality of IP/MAC address pairs tables (Woundy, col. 1 lines 58-61). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a plurality of DHCP servers and, as a result a plurality of tables comprising IP source addresses as disclosed by Woundy given the benefit of eliminate a single point of failure.

An ordinary artisan would readily recognize, as also indicated by Woundy, a plurality of devices, such as DHCP servers, must be synchronized for all the devices to have current table entries, consistent with all other devices and that the process of synchronization inherently causes a delay. During the delay, depending on the LAN's type and bandwidth from the type of a time of receipt of the first packet until device's learning of the first source IP address, a predetermined amount of traffic inherently passes through the port.

13. As per claims 1 and 22, Doyle discloses receiving a plurality (e.g. a second, third, etc.) data packets on the port, determining if the second MAC address for second data packet is a new MAC address and when the second MAC address for the received second data packet is determined to be a new MAC address, learning the source IP address for the second MAC address, wherein the second MAC address and the learned source IP address form a second IP address and MAC address pair and storing the second IP address and MAC address pair in the table (col. 9 lines 44- 64).

14. As per claims 5 and 18, the table reads on Access Control List (it is used to filter data) and in order for the device to access the entries, the table inherently must be stored in memory, but Doyle in view of Woundy do not explicitly the user of a content addressable memory.

However, the use of a content addressable memory is old and well known in the art, (see Mate US PUB 2003/0056001, paragraph 6, for example), and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the content addressable memory given the benefit of efficiency.

15. As per claim 8, Doyle does not explicitly disclose an administrator selecting the maximum number of source IP addresses.

Official Notice is taken that configuring computers by administrators (e.g. determine selection of values, e.g. ports) is old and well-known practice in the art of computing (e.g. DHCP scope administration). One of ordinary skill in the art at the time of applicant's invention would have been motivated to allow administrators to configure computers giving the benefit of network customization.

16. As per claims 6-7, Doyle does not disclose determining and removing the source IP address from the table when it is determined that the device having the IP address is no longer coupled to the port.

Any data structure, including tables, have a finite size and as a result, a finite amount of data can be stored in the structure. Furthermore, an ordinary artisan in the art of computer science would recognize increasing amount of data to be searched increases search time.

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Lastly, monitor activity of computer processes, including network connections and terminate inactive activities is well known in the computer science (e.g. U.S. Patent No. 6338089).

Thus, removing a source IP address, of a device not coupled to the port, from the table would have been obvious to an ordinary artisan given the benefit of system's efficiency.

17. Additionally, as per claims 11-13 and 20-21 discarding data packet received at a port reads on blocking the data packet.

18. Also, as per claim 23, Doyle in view of Woundy do not disclose a timer configured to clear the table of one or more source IP addresses at predetermined time.

However, clearly tables of one or more entries after a predetermine time is old and well known in the art of computer science (e.g. see US PUB 2003/0043763 paragraph 34 or textbooks related to cache entries).

19. As per claim 9, Doyle in view of Woundy do not explicitly disclose that the network device comprise a plurality of ports. However, utilizing a plurality of ports in a network device is old and well known in the art of computer networking (see USPN 6907470 or any TCP/IP textbook, for example), and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate a plurality of ports given the benefit of multiple connections.

Furthermore, Doyle in view of Sawada Doyle in view of Woundy do not explicitly disclose receiving input from a system administrator which selects ports of the plurality of port will be provided based on a source IP address and MAC address

pair contained in a data packet. Official Notice is taken that configuring computers by administrators (e.g. determine selection of values, e.g. ports) is old and well-known practice in the art of computing (e.g. DHCP scope and firewall administration). One of ordinary skill in the art at the time of applicant's invention would have been motivated to allow administrators to configure computers giving the benefit of network customization.

20. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle (U.S. Patent No. 7134012) in view of Woundy (USPN 6009103), and further in view of Whelan (U.S. Pub. No. 20040003285).

Doyle in view of Woundy disclosure has been discussed supra.

Doyle in view of Woundy do not disclose performing a reverse IP check to confirm the learned source IP address.

Whelean discloses performing a reverse IP check to confirm the IP address (Whelean [0036]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform a reverse IP check to confirm the IP address. One of ordinary skill in the art would have been motivated to perform such a modification in order to identify rogue access (Whelean [0036]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Poltorak whose telephone number is (571) 272-3840. The examiner can normally be reached Monday through Thursday from 9:00 a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on (571) 272-3811. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter Poltorak/

Examiner, Art Unit 2134

/Kambiz Zand/

Supervisory Patent Examiner, Art Unit 2134